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## PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION  
(PCT Rule 61.2)

Date of mailing (day/month/year) 13 February 2001 (13.02.01)	To:  Commissioner US Department of Commerce United States Patent and Trademark Office, PCT 2011 South Clark Place Room CP2/5C24 Arlington, VA 22202 ETATS-UNIS D'AMERIQUE  in its capacity as elected Office
International application No. PCT/SE00/00979	Applicant's or agent's file reference 1945/2244
International filing date (day/month/year) 18 May 2000 (18.05.00)	Priority date (day/month/year) 02 July 1999 (02.07.99)
<b>Applicant</b> FUNCK, Pär-Olof et al	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

27 December 2000 (27.12.00)

in a notice effecting later election filed with the International Bureau on:

\_\_\_\_\_

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No.: (41-22) 740.14.35	Authorized officer  Claudio Borton  Telephone No.: (41-22) 338.83.38
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## PATENT COOPERATION TREATY

PCT

**NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES**

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:

WILLOQUIST, Bo  
 Willquist & Partners Patentbyrå AB  
 Platensgatan 9C  
 S-582 20 Linköping  
 SUÈDE

ANKOM

<b>Date of mailing (day/month/year)</b> 11 January 2001 (11.01.01)		
<b>Applicant's or agent's file reference</b> 1945/2244	<b>IMPORTANT NOTICE</b>	
<b>International application No.</b> PCT/SE00/00979	<b>International filing date (day/month/year)</b> 18 May 2000 (18.05.00)	<b>Priority date (day/month/year)</b> 02 July 1999 (02.07.99)
<b>Applicant</b> ASSALUB AB et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:  
AG,AU,DZ,KP,KR,US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:  
AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CN,CR,CU,CZ,DE,DK,DM,EA,EE,EP,ES,FI,GB,GD,  
GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MN,MW,MX,  
NO,NZ,OA,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZW  
The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).
3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on  
11 January 2001 (11.01.01) under No. WO 01/02770

**REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)**

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

**REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))**

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. (41-22) 740.14.35	Authorized officer  J. Zahra  Telephone No. (41-22) 338.83.38
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## PCT

From the INTERNATIONAL BUREAU

INFORMATION CONCERNING ELECTED  
OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

To:

WILLQUIST, Bo  
 Willquist & Partners Patentbyrå AB  
 Platensgatan 9C  
 S-582 20 Linköping  
 SUÈDE

Date of mailing (day/month/year) 13 February 2001 (13.02.01)
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Applicant's or agent's file reference 1945/2244
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## IMPORTANT INFORMATION

International application No. PCT/SE00/00979	International filing date (day/month/year) 18 May 2000 (18.05.00)	Priority date (day/month/year) 02 July 1999 (02.07.99)
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Applicant ASSALUB AB et al
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1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

AP :GH,GM,KE,LS,MW,MZ,SD,SL,SZ,TZ,UG,ZW  
 EP :AT,BE,CH,CY,DE,DK,ES,FI,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE  
 National :AU,BG,CA,CN,CZ,DE,IL,JP,KP,KR,MN,NO,NZ,PL,RO,RU,SE,SK,US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

EA :AM,AZ,BY,KG,KZ,MD,RU,TJ,TM  
 OA :BF,BJ,CF,CG,CI,CM,GA,GN,GW,ML,MR,NE,SN,TD,TG  
 National :AE,AG,AL,AM,AT,AZ,BA,BB,BR,BY,CH,CR,CU,DK,DM,DZ,EE,ES,FI,GB,GD,  
 GE,GH,GM,HR,HU,ID,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MA,MD,MG,MK,MW,MX,  
 PT,SD,SG,SI,SL,TJ,TM,TR,TT,TZ,UA,UG,UZ,VN,YU,ZA,ZW

3. The applicant is reminded that he must enter the "national phase" before the expiration of 30 months from the priority date before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed until 31 months from the priority date for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO  
 34, chemin des Colombettes  
 1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:

Claudio Borton

Telephone No. (41-22) 338.83.38

3833491

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

PCT/SE 00 / 0 0 9 7 9

International Filing Date

18 -05- 2000

The Swedish Patent Office

PCT International Application

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum)

1945/2244

Box No. I TITLE OF INVENTION

Method and device for manual lubrication of a plurality of lubrication points

Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

ASSALUB AB  
Box 240  
S-597 26 ÅTVIDABERG  
Sweden

This person is also inventor.

Telephone No.

Faximile No.

Teleprinter No.

State (that is, country) of nationality:  
SE

State (that is, country) of residence:  
SE

This person is applicant for the purposes of:  all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

FUNCK, Pär-Olof  
Häggatan 18C  
S-587 21 LINKÖPING  
Sweden

This person is:

applicant only

applicant and inventor

inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:  
SE

State (that is, country) of residence:  
SE

This person is applicant for the purposes of:  all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the Supplemental Box

Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:  agent  common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

Each of: WILLQUIST, Bo/ WILLQUIST, Ulf  
JOHANNESSON, Eva  
Willquist & Partners Patentbyrå AB  
Platensgatan 9C  
S-582 20 LINKÖPING  
Sweden

Telephone No.

+46-13246300

Faximile No.

+46-13143398

Teleprinter No.

Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

18-05-2000

*If none of the following sub-boxes is used, this sheet should not be included in the request.*

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

REHN, Niklas  
Talgöxevägen 5  
S-597 32 ÅTVIDABERG  
Sweden

This person is:

- applicant only  
 applicant and inventor  
 inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:  
SE

State (that is, country) of residence:  
SE

This person is applicant for the purposes of:  all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- applicant only  
 applicant and inventor  
 inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of:  all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- applicant only  
 applicant and inventor  
 inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of:  all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- applicant only  
 applicant and inventor  
 inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of:  all designated States  all designated States except the United States of America  the United States of America only  the States indicated in the Supplemental Box

Further applicants and/or (further) inventors are indicated on another continuation sheet.

05-2000

## Box No.V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes: at least one must be marked):

## Regional Patent

- AP ARJPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> AE United Arab Emirates                  | <input checked="" type="checkbox"/> LR Liberia                                   |
| <input checked="" type="checkbox"/> AL Albania                               | <input checked="" type="checkbox"/> LS Lesotho                                   |
| <input checked="" type="checkbox"/> AM Armenia                               | <input checked="" type="checkbox"/> LT Lithuania                                 |
| <input checked="" type="checkbox"/> AT Austria                               | <input checked="" type="checkbox"/> LU Luxembourg                                |
| <input checked="" type="checkbox"/> AU Australia                             | <input checked="" type="checkbox"/> LV Latvia                                    |
| <input checked="" type="checkbox"/> AZ Azerbaijan                            | <input checked="" type="checkbox"/> MA Morocco                                   |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina                | <input checked="" type="checkbox"/> MD Republic of Moldova                       |
| <input checked="" type="checkbox"/> BB Barbados                              | <input checked="" type="checkbox"/> MG Madagascar                                |
| <input checked="" type="checkbox"/> BG Bulgaria                              | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BR Brazil                                |  |
| <input checked="" type="checkbox"/> BY Belarus                               | <input checked="" type="checkbox"/> MN Mongolia                                  |
| <input checked="" type="checkbox"/> CA Canada                                | <input checked="" type="checkbox"/> MW Malawi                                    |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein  | <input checked="" type="checkbox"/> MX Mexico                                    |
| <input checked="" type="checkbox"/> CN China                                 | <input checked="" type="checkbox"/> NO Norway                                    |
| <input checked="" type="checkbox"/> CR Costa Rica                            | <input checked="" type="checkbox"/> NZ New Zealand                               |
| <input checked="" type="checkbox"/> CU Cuba                                  | <input checked="" type="checkbox"/> PL Poland                                    |
| <input checked="" type="checkbox"/> CZ Czech Republic                        | <input checked="" type="checkbox"/> PT Portugal                                  |
| <input checked="" type="checkbox"/> DE Germany                               | <input checked="" type="checkbox"/> RO Romania                                   |
| <input checked="" type="checkbox"/> DK Denmark                               | <input checked="" type="checkbox"/> RU Russian Federation                        |
| <input checked="" type="checkbox"/> DM Dominica                              | <input checked="" type="checkbox"/> SD Sudan                                     |
| <input checked="" type="checkbox"/> EE Estonia                               | <input checked="" type="checkbox"/> SE Sweden                                    |
| <input checked="" type="checkbox"/> ES Spain                                 | <input checked="" type="checkbox"/> SG Singapore                                 |
| <input checked="" type="checkbox"/> FI Finland                               | <input checked="" type="checkbox"/> SI Slovenia                                  |
| <input checked="" type="checkbox"/> GB United Kingdom                        | <input checked="" type="checkbox"/> SK Slovakia                                  |
| <input checked="" type="checkbox"/> GD Grenada                               | <input checked="" type="checkbox"/> SL Sierra Leone                              |
| <input checked="" type="checkbox"/> GE Georgia                               | <input checked="" type="checkbox"/> TJ Tajikistan                                |
| <input checked="" type="checkbox"/> GH Ghana                                 | <input checked="" type="checkbox"/> TM Turkmenistan                              |
| <input checked="" type="checkbox"/> GM Gambia                                | <input checked="" type="checkbox"/> TR Turkey                                    |
| <input checked="" type="checkbox"/> HR Croatia                               | <input checked="" type="checkbox"/> TT Trinidad and Tobago                       |
| <input checked="" type="checkbox"/> HU Hungary                               | <input checked="" type="checkbox"/> TZ United Republic of Tanzania               |
| <input checked="" type="checkbox"/> ID Indonesia                             | <input checked="" type="checkbox"/> UA Ukraine                                   |
| <input checked="" type="checkbox"/> IL Israel                                | <input checked="" type="checkbox"/> UG Uganda                                    |
| <input checked="" type="checkbox"/> IN India                                 | <input checked="" type="checkbox"/> US United States of America                  |
| <input checked="" type="checkbox"/> IS Iceland                               |  |
| <input checked="" type="checkbox"/> JP Japan                                 | <input checked="" type="checkbox"/> UZ Uzbekistan                                |
| <input checked="" type="checkbox"/> KE Kenya                                 | <input checked="" type="checkbox"/> VN Viet Nam                                  |
| <input checked="" type="checkbox"/> KG Kyrgyzstan                            | <input checked="" type="checkbox"/> YU Yugoslavia                                |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | <input checked="" type="checkbox"/> ZA South Africa                              |
| <input checked="" type="checkbox"/> KR Republic of Korea                     | <input checked="" type="checkbox"/> ZW Zimbabwe                                  |
| <input checked="" type="checkbox"/> KZ Kazakhstan                            |  |
| <input checked="" type="checkbox"/> LC Saint Lucia                           |  |
| <input checked="" type="checkbox"/> LK Sri Lanka                             |  |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- DZ Algeria
- AG Antigua and Barbuda

**Precautionary Designation Statement:** In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application: regional Office	international application: receiving Office
item (1) 02.07.99 02 July 1999	9902547-0	Sweden		
item (2)				
item (3)				

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): **9902547-0**

\* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

#### Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / SE      Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day/month/year)      Number      Country (or regional Office)

[16 January 2000] , SE 99/00947 SE

#### Box No. VIII CHECK LIST: LANGUAGE OF FILING 02.07.1999

This international application contains the following number of sheets:	This international application is accompanied by the item(s) marked below:	
request : 4 ✓	1. <input checked="" type="checkbox"/> fee calculation sheet	
description (excluding sequence listing part) : 3 ✓	2. <input type="checkbox"/> separate signed power of attorney	
claims : 2 ✓	3. <input type="checkbox"/> copy of general power of attorney; reference number, if any:	
abstract : 1 ✓	4. <input type="checkbox"/> statement explaining lack of signature	
drawings : 2 ✓	5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s):	
sequence listing part of description :	6. <input type="checkbox"/> translation of international application into (language):	
Total number of sheets : 12 ✓	7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material	
	8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form	
	9. <input checked="" type="checkbox"/> other (specify): Int. Type Search report	

Figure of the drawings which should accompany the abstract: 1      Language of filing of the international application: Swedish

#### Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

ASSALUB AB

Pär-Olof Funck

Niklas Rehn

Pär-Olof Funch (President) Pär-Olof Funck

Niklas Rehn

For receiving Office use only		
1. Date of actual receipt of the purported international application:	18 -05- 2000	
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	<input checked="" type="checkbox"/> received: <input type="checkbox"/> not received:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA / SE	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.	

#### For International Bureau use only

Date of receipt of the record copy by the International Bureau: 20 JUNE 2000      20.06.00

1/2

FIG 1

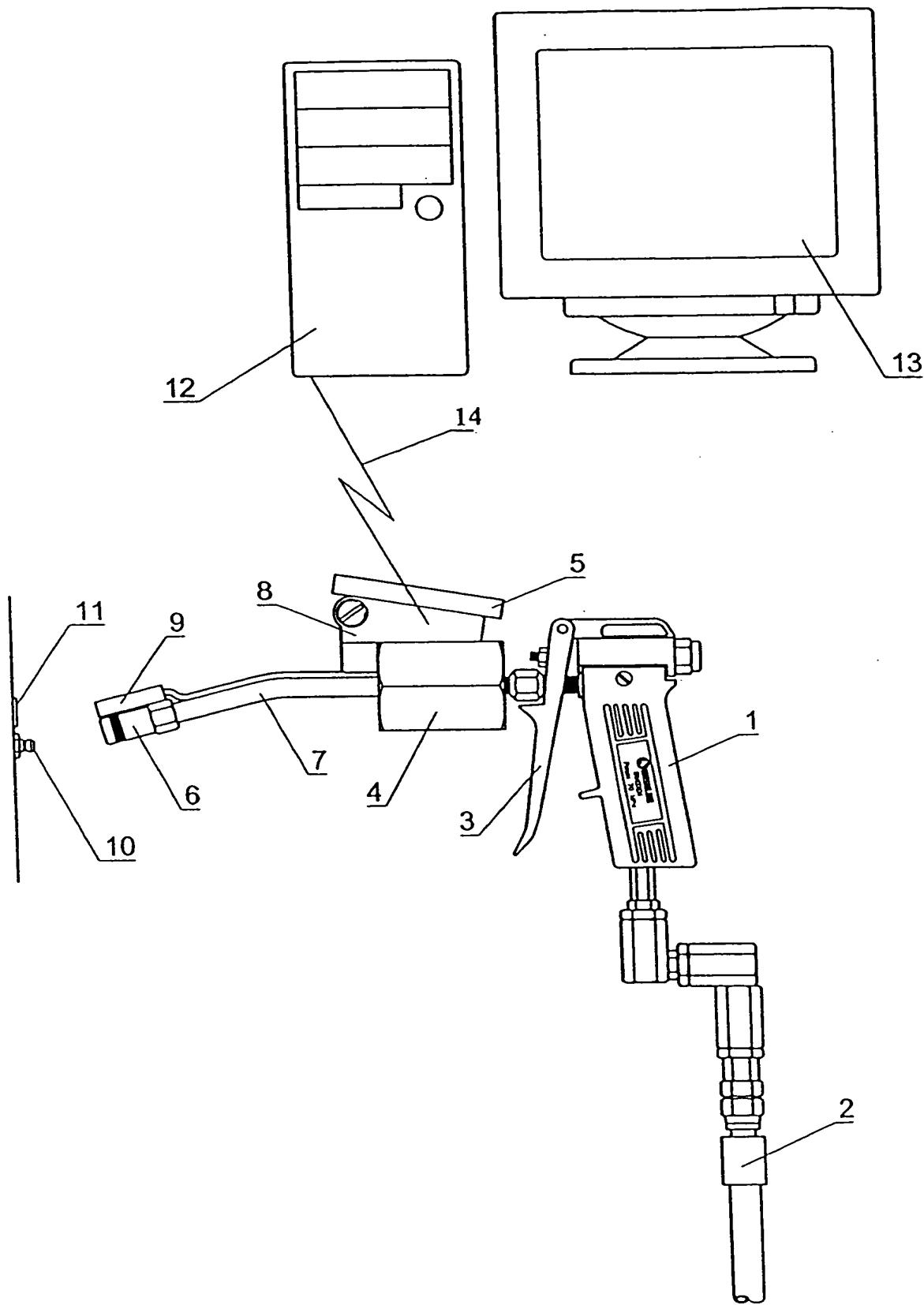
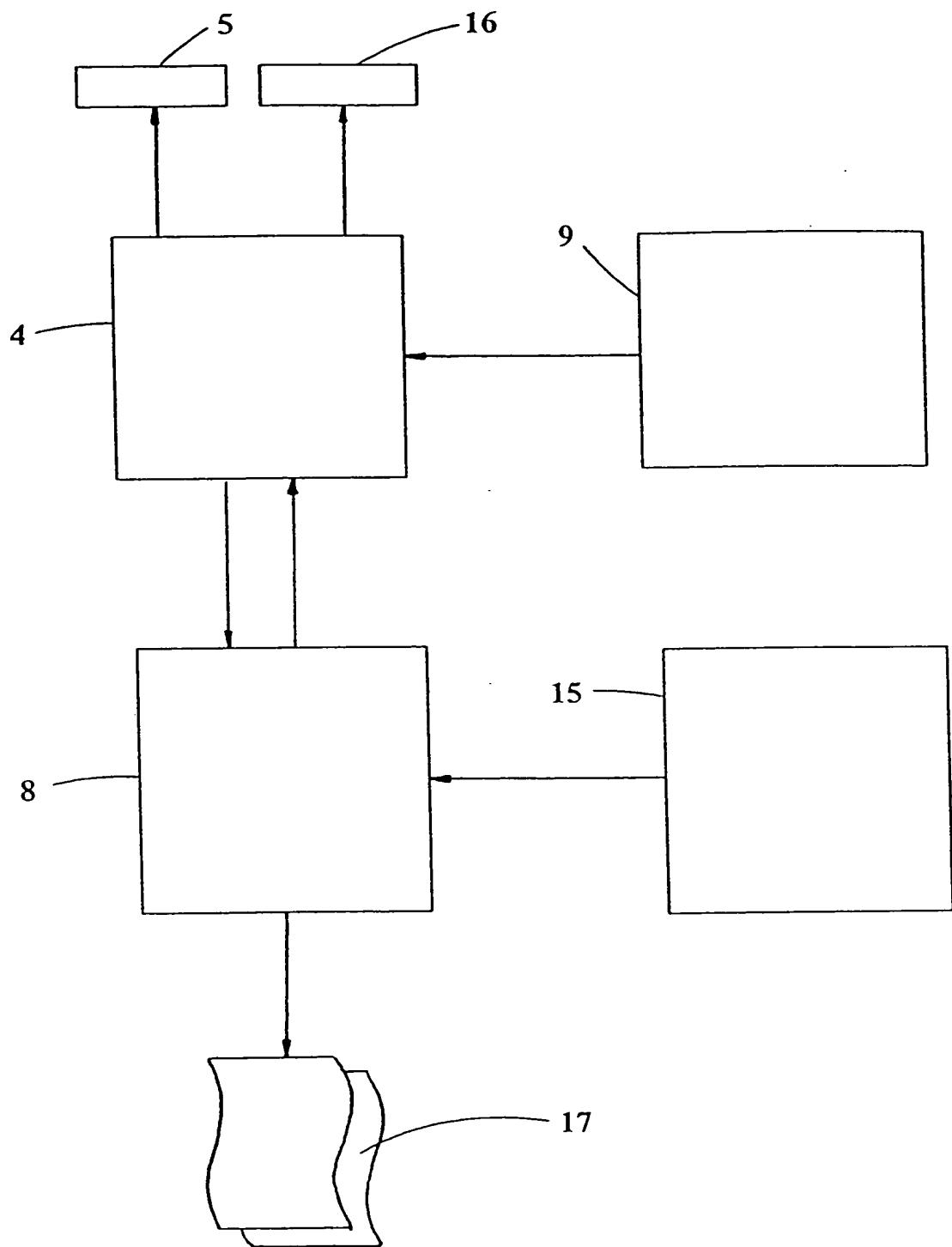


FIG 2



Metod vid och anordning för manuell smörjning av ett flertal smörjpunkter

Föreliggande uppfinning avser en metod enligt ingressen till patentkrav 1 och en anordning enligt ingressen till patentkrav 6.

- Vid manuell smörjning av en maskin, t ex en pappersmaskin, med ett flertal smörjpunkter har den person, som utför arbetet som stöd för minnet ett smörjschema i vilket är införlida uppgifter om varje smörjpunkts placering på maskinen, smörjpunkten s smörjfrekvens och dess smörjmedelsbehov. Utförd smörjning kvitteras vanligtvis med en datumuppgift och signatur för samtliga smörjpunkter.
- Det har visat sig att uppgifter om verkställd smörjning ibland ej stämmer, skälen här till kan vara många, men det allvarliga är, att utebliven smörjning kan ge upphov till allvarliga maskinskador med maskinstillestånd och får produktionsbortfall som följd. Bevisfrågan är svår när det gäller att t ex vid ett lagerhaveri konstatera om smörjning skett på beordrat sätt eller ej.
- Ändamålet med föreliggande uppfinning är att åstadkomma en metod av inledningsvis nämnd slag genom vilken säkerställes en smörjning av samtliga smörjpunkter med korrekt mängd smörjmedel och där smörjningen dokumenteras på säkert sätt. Detta uppnås genom de i kännetecknande delen av patentkrav 1 angivna dragen.
- En uppfinningensenlig anordning har i kombination de kännetecken, som anges i patentkrav 6.
- Uppfinningen skall i det följande förklaras närmare med hänvisning till bifogad ritning på vilken fig 1 schematiskt visar en anordning enligt uppfinningen och fig 2 illustrerar dess funktion.
- På ritningen betecknar 1 generellt en smörjmedelspruta, som via en ledning 2 står i förbindelse med en ej visad smörjmedelbehållare. I sprutan finns en pump, som manuellt påverkas medelst en spak 3 och en mätanordning 4 med indikeringsorgan 5. Via ledningen 2, pumpanordningen och mätanordningen 4 kommunicerar smörjmedelbehållaren med ett munstycke 6 anordnat på ett rör 7.
- Ett styrdon 8, på vars hölje indikeringsorganet 5 lämpligen är monterat, är forbundet med mätanordningen 4, pumpanordningen och en vid munstycket 6 anordnad smörjpunktsidentifieringsanordning 9. Denna är inrättad att samverka med ett i anslutning

till varje smörjpunkt 10 tillordnat identifieringsorgan 11, vilket är så placerat att när munstycket 6 är anslutet till smörjpunktens 10 nippel förmår smörjpunktsidentifiekningsanordningen avläsa den i identifieringsorganet 11 för smörjpunkten ifråga unika informationen.

5

I det i fig 1 visade utförandet är styrdonet 8 inrättat att medelst radiokommunikation, illustrerad med en linje 14, stå i förbindelse med en stationär dator 12 vars minne innehåller data om varje enskild smörjpunkts behov av smörjning. Medelst radiokommunikationen överförs alltså till styrdonet 8 en uppgift om smörjmängd för varje enskild smörjpunkt och från styrdonet 8 till datorns minne uppgift om verkställd smörjning av de enskilda smörjställena så att efter en smörjrunda i datorns minne finns uppgift om vilka smörjpunkter som besökts och vilken smörjmedelsmängd, som tillförlits. Härigenom är det möjligt att på datorns 12 skärm 13 eller med en konventionell utskrift åstadkomma ett smörjprotokoll i vilket det finns möjlighet att särskilt utpeka eventuellt missade smörjpunkter.

Radiokommunikationen förutsätter en kommunikation i realtid. Inom uppföringens ram faller naturligtvis kommunikation med andra medel t ex baserad på infrarödteknik och ett alternativt utförande enligt vilket i styrdonet 8 finns ett minne, som är anslutbart till datorns 12 minne på ett sådant sätt att före en smörjrunda matas information avseende smörjmedelsmängd till styrdonets 8 minne och efter smörjrundan sker en uppdatering av datorns 12 minne genom informationsöverföring från styrdonets 8 minne.

25

Med hänvisning till fig 2 skall nu förklaras vad som sker före, under och efter en smörjrunda. Det är uppenbart att skeendet är olika beroende på om smörjmedelsprutans 1 styrdon 8 är inrättat att i realtid kommunicera med datorn 12 eller om styrdonet 8 är utrustat med ett minne som före och efter en smörjrunda kopplas till datorn 12 för informationsutbyte. I det förstnämnda fallet överförs informationen mellan datorn 12 och styrdonet 8 istället i anslutning till varje enskild smörjpunkt. I fig 2 antyds med ett block 15 överföring av varje smörjpunkts smörjbehov till styrdonet 8. Personen som genomför smörjrundan, fortsättningsvis kallat smörjare, följer antingen en förutbestämd smörjrutt eller genomför smörjrundan i den ordning de individuella smörjpunkterna anges på smörjsprutans 1 indikeringsorgan 5. När smörjmedelsprutans 1 munstycke 6 ansluts till en smörjpunkt 10 erhålls automatiskt med hjälp av till smörjpunkten ifråga hörande identifieringsorgan 11 och smörjsprutans 1 identifieringsanordning 9 på indikeringsorganet 5 uppgift om smörjpunkten ifråga. Antingen informationen om den mängd smörjmedel som skall tillföras smörjpunkten finns lagrad i styrdonet 8 eller tillförs detta i realtid från datorn 12 visas

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också denna uppgift på indikeringsorganet 5, när smörjpunkten identitetsverifierats.  
Smörjaren börjar doseringen till smörjpunkten och kan på indikeringsorganet 5 förlöpande se hur mycket smörjmedel, som matats in med hjälp av mätanordningen 4 eller alternativt hur stor mängd smörjmedel som återstår att tillföra till smörjpunkten (nedräkning). Det finns lämpligen en akustisk larmanordning 16 inrättad att förvarna smörjaren om uppnådd dosering. Uppgift om verkställd smörjning lagras i styrenheten 8 eller överförs i realtid till datorn 12. I fig 2 symboliseras uppgiftslistor 17 att denna uppgift kan tas från styrdonet 8, men det är uppenbart att motsvarande information kan tas ur den stationära datorn 12 eller visas på skärmen 13.

10

Skulle det efter en verkställd smörjrunda finnas en eller flera smörjpunkter, som ej besöks, erhålls larm om detta antingen på skärmen 13 eller genom en separat utskrift från styrenheten 8. Det finns därigenom ingen som helst risk att skador skulle kunna uppkomma till följd av utebliven smörjning.

15

Patentkrav

1. Metod vid manuell smörjning av ett flertal smörjpunkter (10) med en för varje smörpunkt individuellt förutbestämd smörjmedelsmängd, kännetecknad därav, att  
smörpunkterna förses med en individuell identifiering (11)  
5 i ett minne (12) lagras uppgifter om smörjmängd, som vid varje smörjtillfälle skall tillföras varje individuell smörpunkt,  
vid smörjning av en smörpunkt avkännes punktens identifiering (11) och ur minnet (12) hämtas uppgift om den förutbestämda, till den identifierade smörpunktens hörande smörjmedelsmängden varefter denna mängd smörjmedel  
10 tillföres smörpunktens,  
uppgift om verkställd smörjning och tidpunkt härför lagras i minnet.
2. Metod enligt patentkrav 1, kännetecknad därav, att i anslutning till en planerad smörjrunda matas från förstnämnda minne (12) till ett andra, bärbart  
15 minne (8) uppgifter om i detta lagrade smörjmedelsmängder för varje individuell smörpunkt (10) och att efter verkställd smörjrunda överförs nämnda uppgifter från det andra minnet (8) till det förstnämnda minnet (12).
3. Metod enligt patentkrav 1 eller 2, kännetecknad därav, att vid identificeringen av en enskild smörpunkt (10) visas smörjmedelsmängd, som skall tillföras punkten ifråga och att när denna mängd tillförts visas (5) detta och/eller  
20 indikeras detta akustiskt (16).
4. Metod enligt något av patentkraven 1-3, kännetecknad därav, att ur  
25 minnet (8; 12) hämtas en lista (17) över smörpunkter som besökts under en smörjrunda och till varje smörpunkt individuellt tillförd smörjmedelsmängd.
5. Metod enligt något av patentkraven 1-3, kännetecknad därav, att ur  
minnet (8; 12) lagrade uppgifter beräknas för en följande smörjrunda tidpunkt  
30 för denna och för smörpunkterna individuella uppgifter om smörjmedels-  
mängd.
6. Anordning för manuell smörjning av ett flertal smörpunkter (10) med en för  
varje smörpunkt individuellt förutbestämd smörjmedelsmängd,  
35 kännetecknad därav, att anordningen innehåller i kombination:

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- vid varje smörjpunkt (10) ett för smörjpunkten unikt identifieringsorgan (11), en smörjmedelspruta (1) med en smörjmedelbehållare, som via en pumpanordning och en mätanordning (4) med indikeringsorgan (5) kommunicerar med ett munstycke (6), ett med mätanordningen (4) och pumpanordningen forbundet styrdon (8), med vilket kommunicerar ett minne med lagrade data om varje enskild smörjpunkts behov av smörjning med vilket smörjmedelsprutan (1) är inrättad att kommunicera för överföring till styrdonet (8) av en smörjmängdsangivelse för varje enskild smörjpunkt och för utmatning ur styrdonet (8) av i detta lagrade uppgifter om verkställd smörjning av enskilda smörjställen och en i anslutning till munstycket (6) anordnad smörjpunktidentifieringsanordning (9) inrättad att när munstycket (6) anslutes till en smörjpunkt medelst identifieringsorganet (11) automatiskt identifiera smörjpunkten (10) ifråga och dess smörjmedelsbehov samt medel för att vid varje smörjoperation i minnet lagra data om till smörjpunkten ifråga tillförd smörjmedelsmängd.
- 15
7. Anordning enligt patentkrav 6, kännetecknad därav, att minnet är en stationär dators (12) minne och att anordningen innefattar en kommunikationsutrustning inrättad att åstadkomma kommunikation mellan styrdonet (8) och datorminnet.
- 20
8. Anordning enligt patentkrav 7, kännetecknad därav, att kommunikationsutrustningen är en radiokommunikationsutrustning.
- 25
9. Anordning enligt patentkrav 7, kännetecknad därav, att styrdonet (8) innefattar minneselement inrättade att lagra nämnda data och uppgifter under ett tidsintervall mellan en smörjrundas början och slut och att minneselementen är inrättade att kommunicera med datorminnet.

Sammandrag

Uppfinningen avser en metod vid och anordning för manuell smörjning av ett flertal smörjpunkter (10) med en för varje smörjpunkt individuellt förutbestämd smörjmedelsmängd. Smörjpunkterna förses med individuella identifieringsorgan (11). I ett minne (12) lagras uppgifter om smörjmängd, som vid varje smörjtillfälle skall tillföras varje individuell smörjpunkt. Vid smörjning identifieras smörjpunkten och ur minnet (12) hämtas uppgift om den förutbestämda, smörjmedelsmängden varefter denna tillföres smörjpunkten. Uppgift om verkställd smörjning och tidpunkt härför lagras i minnet. Anordningen innefattar en smörjmedelspruta (1) med en smörjmedelbehållare, en pumpanordning, en mätanordning (4) med indikeringsorgan (5) och ett munstycke (6). Mätanordningen (4) och pumpanordningen är förbundna med ett styrdon (8). Med detta kommunicerar ett minne med lagrade data om varje smörjpunkts smörjbehov. Smörjmedelsprutan (1) kommunicerar med minnet för överföring till styrdonet (8) av en smörjmängdsangivelse för varje smörjpunkt och för utmatning ur styrdonet (8) av i detta lagrade uppgifter om verkställd smörjning av smörjställena. En vid munstycket (6) anordnad smörjpunktidentifieringsanordning (9) identifierar automatiskt smörjpunkten när munstycket (6) anslutes till denna med identifieringsorganet (11). Det finns medel för att vid varje smörjoperation i minnet (12) lagra data om till smörjpunkten ifråga tillförd smörjmedelsmängd.

20 (Fig 1)

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 1945/2244	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/SE00/00979	International filing date (day/month/year) 18.05.2000	Priority date (day/month/year) 02.07.1999
International Patent Classification (IPC) or national classification and IPC7 F16N 29/02, E01M 11/10		
Applicant Assalub AB et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I  Basis of the report
- II  Priority
- III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV  Lack of unity of invention
- V  Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI  Certain documents cited
- VII  Certain defects in the international application
- VIII  Certain observations on the international application

Date of submission of the demand 27.12.2000	Date of completion of this report 26.06.2001
Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. 08-667 72 88	Authorized officer Jan-Axel Ylivainio / MRO Telephone No. 08-782 25 00

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/00979

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

 the international application as originally filed the description:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the claims:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement) under article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the drawings:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_ the sequence listing part of the description:pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

## 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language English which is: the language of a translation furnished for the purposes of international search (under Rule 23.1(b)). the language of publication of the international application (under Rule 48.3(b)). the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

 contained in the international application in written form. filed together with the international application in computer readable form. furnished subsequently to this Authority in written form. furnished subsequently to this Authority in computer readable form. The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished. The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4.  The amendments have resulted in the cancellation of: the description, pages \_\_\_\_\_ the claims, Nos. \_\_\_\_\_ the drawings, sheet/fig \_\_\_\_\_5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2 (c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/SE00/00979

## V. Reasons statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims 1-9	YES
	Claims _____	NO
Inventive step (IS)	Claims 1-9	YES
	Claims _____	NO
Industrial applicability (IA)	Claims 1-9	YES
	Claims _____	NO

## 2. Citations and explanations (Rule 70.7)

## Cited document:

A: EP 0926426 A1

The claimed invention relates to a method and device for the manual lubrication of a plurality of lubrication points with a quantity of lubricant individually predetermined for each lubrication point.

The object of the invention is to provide a method and device by means of which the lubrication of all lubrication points with the correct quantity of lubricant can be ensured, and in which the lubrication is reliably documented.

The object is achieved with a method and device having the specific features as stated in the characterising parts of independent claims 1 and 6.

Document A cited in the International Search Report represents the prior art. The claimed invention stated in claims 1 and 6 is not considered to be anticipated by this document. The document does not reveal a method and device as described by these claims.

According to the arguments stated above, the invention claimed in claims 1 and 6 has novelty, industrial applicability and is considered to involve an inventive step.

Dependent claims 2-5 and 7-9 are acceptable in conjunction with claims 1 and 6 respectively.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/00979

## A. CLASSIFICATION OF SUBJECT MATTER

**IPC7: F16N 29/02, F01M 11/10**

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

**IPC7: F16N, F01M**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

**SE, DK, FI, NO classes as above**

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0926426 A1 (SATZINGER GMBH & CO.), 30 June 1999 (30.06.99), figure 1, abstract -- -----	1,6

 Further documents are listed in the continuation of Box C. See patent family annex.

- \* Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

18 July 2000

Date of mailing of the international search report

27 -07- 2000

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**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

02/12/99

International application No.  
**PCT/SE 00/00979**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0926426 A1	30/06/99	AU 9816998 A DE 19757546 A	15/07/99 01/07/99

(19) World Intellectual Property Organization  
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(10) International Publication Number  
**WO 01/02770 A1**

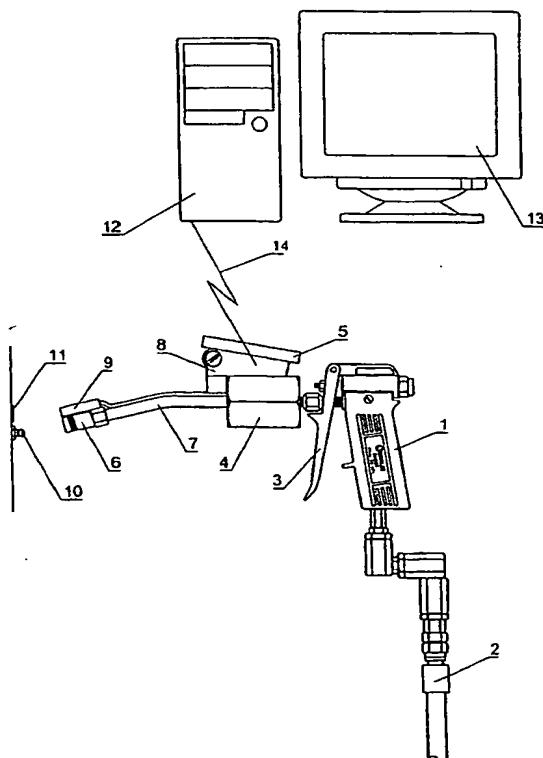
- (51) International Patent Classification<sup>7</sup>: F16N 29/02. (74) Agents: WILLQUIST, Bo et al.; Willquist & Partners Patentbyrå AB, Platensgatan 9C, S-582 20 Linköping (SE).
- (21) International Application Number: PCT/SE00/00979
- (22) International Filing Date: 18 May 2000 (18.05.2000)
- (25) Filing Language: Swedish
- (26) Publication Language: English
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9902547-0 2 July 1999 (02.07.1999) SE
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- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

## Published:

— With international search report.

*[Continued on next page]*

## (54) Title: METHOD IN AND DEVICE FOR THE MANUAL LUBRICATION OF A PLURALITY OF LUBRICATION POINTS



(57) Abstract: The invention relates to a method in and a device for the manual lubrication of a plurality of lubrication points (10) with a quantity of lubricant individually predetermined for each lubrication point. The lubrication points are provided with individual identification elements (11). Information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication is stored in a memory (12). During lubrication the lubrication point is identified and information on the predetermined quantity of lubricant is retrieved from the memory (12), following which this is administered to the lubrication point. Information on the lubrication carried out and the time thereof is stored in the memory. The device comprises a lubricant gun (1) with a lubricant reservoir, a pump device, a measuring device (4) with indicating element (5) and a nozzle (6). The measuring device (4) and the pump device are connected to a control element (8). Connected to the control element is a memory containing stored data on the lubrication requirement of each lubrication point. The lubricant gun (1) communicates with the memory for transfer to the control element (8) of a lubricant quantity specification for each lubrication point and for feeding information stored in the control element (8) on lubrication carried out at the lubrication points. A lubrication point identification device (9) arranged on the nozzle (6) automatically identifies the lubrication point (10) when the nozzle (6) is connected thereto with the identification element (11). Means are provided for storing data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.

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**WO 01/02770 A1**



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

Method in and device for the manual lubrication of a plurality of lubrication points

The present invention relates to a method according to the pre-characterising part of claim 1 and a device according to the pre-characterising part of claim 6.

In the manual lubrication of a machine, for example a papermaking machine, having a plurality of lubrication points, the person carrying out the lubrication has, as an aid to memory, a lubrication diagram containing information on the location of each lubrication point on the machine, the frequency of lubrication for that lubrication point and the requisite quantity of lubricant. Performance of the lubrication is usually confirmed by entering a date and signature for all lubrication points.

It has been shown that information on the lubrication carried out is sometimes incorrect, there being many possible reasons for this, but the important fact is that failure to carry out lubrication may cause serious damage to machinery with machine shutdowns, resulting in lost production. The question of proof is a difficult one when it comes to verifying in the case of a damaged bearing, for example, whether or not lubrication has been carried out in the prescribed manner.

The object of the present invention is to provide a method of the said type, by means of which the lubrication of all lubrication points with the correct quantity of lubricant can be ensured and in which the lubrication is reliably documented. This is achieved by means of the features specified in the characterising part of claim 1.

A device according to the invention has a combination of the characteristics specified in claim 6.

The invention will be explained in more detail below with reference to the drawing attached in which figure 1 shows a diagram of a device according to the invention and figure 2 illustrates the functioning thereof.

In the drawing 1 generally denotes a lubricant gun, which is connected by way of a line 2 to a lubricant reservoir (not shown). The gun contains a pump, which is manually actuated by means of a lever 3, and a measuring device 4 with indicating element 5. The lubricant reservoir is connected by way of the line 2, the pump device and the measuring device 4 to a nozzle 6 arranged on a tube 7.

- A control element 8, on the casing of which the indicating element 5 is suitably mounted, is connected to the measuring device 4, the pump device and lubrication point identification device 9 arranged at the nozzle 6. The said identification device is designed to interact with an identification element 11, assigned to each lubrication point 10 and located so that when the nozzle 6 is connected to the nipple of the lubrication point 10 the lubrication point identification device is capable of reading off the information in the identification element that is unique to the lubrication point in question.
- 5        10 In the embodiment shown in figure 1 the control element 8 is designed to be connected by radio communication, shown by a line 14, to a fixed computer 12, the memory of which contains data on the lubrication requirement of each separate lubrication point. By means of radio communication, therefore, information on the quantity of lubricant for each separate lubrication point is transmitted to the control element 8, and information on the lubrication performed at the individual lubrication points is transmitted from the control element 8 to the memory of the computer, so that following a lubrication round the computer memory contains information on which lubrication points have been visited and what quantity of lubricant has been administered. It is thereby possible to produce a lubrication report either on the 15        20 screen 13 of the computer 12 or in a conventional printout, in which there is the facility for specially identifying any lubrication points missed.

Radio communication implies communication in real time. The scope of the invention obviously also includes communication by other means based, for 25        30 example, on infrared technology, and an alternative embodiment, according to which the control element 8 contains a memory, which can be connected to the memory of the computer 12 in such a way that prior to a lubrication round information regarding the quantity of lubricant is fed to the memory of the control element 8 and following the lubrication round the memory of the computer 12 is updated by a transfer of information from the memory of the control element 8.

Referring to figure 2, it will now be explained what happens before, during and after a lubrication round. It will be obvious that the process differs depending on whether the control element 8 of the lubricant gun 1 is designed to communicate with the 35        40 computer 12 in real time or whether the control device 8 is equipped with a memory that is coupled to the computer 12 for the exchange of information before and after a lubrication round. In the first aforementioned case the information is transferred

between the computer 12 and the control element 8 instead of to each separate lubrication point. In figure 2 the transmission of the lubrication requirement of each lubrication point to the control element 8 is indicated by a block 15. The person carrying out the lubrication round, hereinafter called the greaser, either follows a 5 predetermined lubrication route or carries out the lubrication round in the individual lubrication point order indicated on the indicating element 5 of the lubrication gun 1. When the nozzle 6 of the lubricant gun 1 is connected to a lubrication point 10, information on the lubrication point in question is obtained automatically by means of identification elements 11 belonging to the lubrication point in question and the 10 identification device 9 of the lubricant gun 1 on the indicating element 5. Information on the quantity of lubricant that is to be administered to the lubrication point is either stored in the control element 8, or it is fed to the latter in real time from the computer 12 and this information shown on the indicating element 5, when the identity of the lubrication point has been verified. The greaser begins dosing the lubrication point 15 and can continuously see on the indicating element 5 how much lubricant has been fed in by means of the measuring device 4, or alternatively what quantity of lubricant still remains to be administered to the lubrication point (countdown). An audible alarm device 16 is appropriately designed to warn the greaser that the set dosage has been reached. Information on the lubrication performed is stored in the control unit 8 or is transmitted in real time to the computer 12. In figure 2, information lists 17 symbolise the fact that this information can be taken from the control element 8, but it will be obvious that corresponding information can be retrieved from the fixed 20 computer 12 or shown on the screen 13.

25 If, after completing a lubrication round, there are one or more lubrication points that have not been visited, a warning to this effect is received from the control unit 8 either on the screen 13 or through a separate print-out. There is therefore no risk whatsoever of damage possibly occurring as a result of failure to carry out lubrication.

Claims

1. Method in the manual lubrication of a plurality of lubrication points (10) with a quantity of lubricant individually predetermined for each lubrication point, **characterised in that**  
the lubrication points are provided with an individual identification (11)  
5 information on the quantity of lubricant that is to be administered to each individual lubrication point in each instance of lubrication is stored in a memory (12), in the lubrication of a lubrication point the identification (11) of the point is detected and information on the predetermined quantity of lubricant for the lubrication point identified is retrieved from the memory (12), following  
10 which the said quantity of lubricant is administered to the lubrication point, information on the lubrication carried out and the time thereof is stored in the memory.
2. Method according to claim 1, **characterised in that** in connection with a planned lubrication round information on the quantities of lubricant for each individual lubrication point stored in the aforementioned memory (12) is fed from that memory to a second, mobile memory (8) and that after carrying out  
15 the lubrication round the said information is transmitted from the second memory 8 to the aforementioned memory (12).
3. Method according to claim 1 or 2, **characterised in that** on identification of an individual lubrication point (10) the quantity of lubricant is shown that is to be administered to the lubrication point in question and that when the said quantity has been administered this is shown (5) and/or indicated by audible  
20 means (16).
4. Method according any of claims 1 to 3, **characterised in that** a list (17) of lubrication points visited during a lubrication round and the quantity of lubricant individually administered to each lubrication point is retrieved from  
25 the memory (8; 12).
5. Method according to any of claims 1 to 3, **characterised in that** the time for a subsequent lubrication round and information on the quantity of lubricant for the individual lubrication points is calculated from information stored in the  
30

memory (8; 12).

6. Device for the manual lubrication of a plurality of lubrication points (10) with a quantity of lubricant individually predetermined for each lubrication point, **characterised in that** the device comprises a combination of:
  - 5 an identification element (11) unique to the lubrication point at each lubrication point (10), a lubricant gun (1) with a lubricant reservoir, which is connected by way of a pump device and a measuring device (4) with indicating element (5) to a nozzle (6), a control element (8) connected to the measuring device (4) and the pump device, connected to which control element is a memory containing stored data on the lubrication requirement of each individual lubrication point, with which memory the lubricant gun (1) is designed to communicate for transfer to the control element (8) of a lubricant quantity specification for each separate lubrication point and for feeding information stored in the control element (8) on the lubrication carried out at the individual lubrication points, and a lubrication point identification device (9) arranged in connection with the nozzle (6) and designed, when the nozzle (6) is connected to a lubrication point, to automatically identify the lubrication point (10) in question and its lubrication requirement by means of the identification element (11), together with means for storing in the memory data on the quantity of lubricant administered to the lubrication point in question in each lubrication operation.
  - 15
  - 20
7. Device according to claim 6, **characterised in that** the memory is the memory of a fixed computer (12) and that the device comprises communications equipment designed to achieve communication between the control element (8) and the computer memory.
- 25
8. Device according to claim 7, **characterised in that** the communications equipment is radio communications equipment.
- 30
9. Device according to claim 7, characterised in that the control element (8) comprises memory elements designed to store the said data and information for a time interval between the beginning and end of one lubrication round and that the memory elements are designed to communicate with the computer memory.

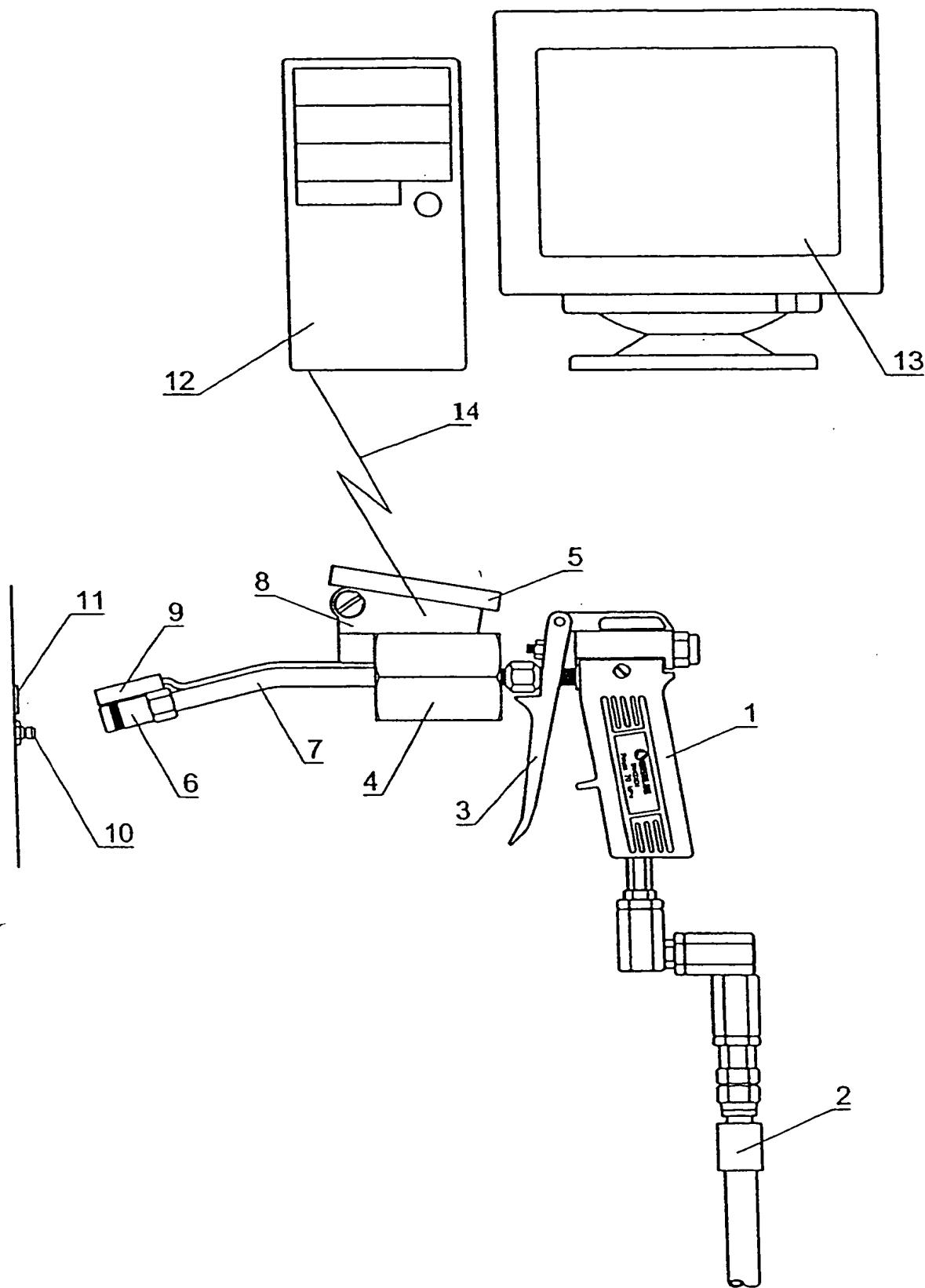
**FIG 1**

FIG 2

